DOCUMENT RESUME

ED 387 787 CS 012 281

AUTHOR Kibby, Michael W.
TITLE Practical Steps for Informing Literacy Instruction: A Diagnostic Decision-Making Model.
INSTITUTION International Reading Association, Newark, Del.
REPORT NO ISBN-0-87207-133-2
PUB DATE 95
NOTE 74p.
AVAILABLE FROM Order Dept., International Reading Association, 800 Barksdale Road, P.O. Box 8139, Newark, DE 19714-8139 (Book No. 133: $8 members, $12 nonmembers).
PUB TYPE Guides - Classroom Use - Teaching Guides (For Teacher) (052) -- Books (010)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Case Studies; Diagnostic Teaching; Elementary Education; *Instructional Improvement; Models; *Reading Ability; Reading Diagnosis; *Reading Instruction; Reading Strategies; *Student Evaluation; *Teacher Role
IDENTIFIERS Reading Behavior

ABSTRACT

This monograph presents a diagnostic decision-making model for reading, elementary, and special education teachers to use as a guide in assessing and evaluating students' reading abilities to design and provide more appropriate reading instruction. The model in the monograph gives an overall perspective or gestalt of the components and strategies important to successful reading, and it provides a sequence for evaluating those components and strategies in a rational and efficient manner. The monograph is intended particularly for teachers who have adapted holistic, child-centered, or literature-based instructional rationales and who now assume responsibility for designing reading instruction for each student in their classes. Chapters in the monograph are: (1) Rationale and Purpose of the Diagnostic Decision-Making Model; (2) General Orientation to the Diagnostic Decision-Making Model; (3) The Diagnostic Process; and (4) A Complete Example: Sandra. Contains 66 references and 3 figures illustrating aspects of the model. (RS)

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Library of Congress Cataloging in Publication Data

Practical steps for informing literacy instruction: a diagnostic decision-making model/Michael W. Kibby
p. cm.
Includes bibliographical references.
1. Reading—United States—Ability testing. I. Title.
LB1050.46.K53 1995 95-18246
428.4'076—dc20 CIP
ISBN 0-87207-133-2 (pbk.)

For E, JKK, and AJK

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Foreword

The search to understand the reading difficulties that children experience has deep historical roots. Physicians were among the earliest specialists to pursue a form of reading diagnosis. Early in the 20th century, two developments occurred in the field of education to support the systematic study of reading difficulty. First, early reading researchers established the conceptual and empirical basis for understanding the psychology of reading. Second, advances in psychometric theory laid the basis for developing tests to measure human traits. The 1910s and 1920s were a period of ferment as teachers in school settings and researchers in university clinics studied individuals who encountered reading difficulty. Through detailed case studies, they improved their testing procedures and developed more effective instructional remedies. This early form of reading diagnosis was refined in subsequent decades to reflect our increasing knowledge of reading processes, the nature of learning, and instructional possibilities.

The knowledge that has been developed over the decades is highly significant to teachers who are pursuing more individualized forms of literature-based instruction. But how can this knowledge be conveyed in a manner that is useful to teachers during their daily decision making? This was the challenge that faced Michael Kibby, an experienced clinician who works closely with teachers in the school setting. The terrain of reading diagnosis is familiar to Kibby and to those who regularly work with children who encounter reading difficulties. In a sense, with the challenge he faced, Kibby was not unlike early map makers who were themselves familiar with a territory and its distinctive features; their task was to develop a representation that would enable newcomers to the territory to find their way. In a similar way, Kibby has charted the processes of reading diagnosis. His map is complex because it truly represents the complicated domain of reading diagnosis. He has identified the important con-

cepts and described their meaning in terms of assessment and decision making. He has laid bare the logic of the process, and it is this explication of sequence that will enable teachers not only to conduct an efficient diagnosis but also to focus on selected aspects of the diagnositc process and to know how those components fit within the larger process. Kibby has creatively built on and developed the ideas of such pioneers as William S. Gray, Helen M. Robinson, and John Bormuth in his characterization of reading diagnosis and the relation between aspects of text and characteristics of the reader.

The Diagnostic Decision-Making Model is a useful tool and guide. As Kibby cautions, its meaning must be constructed by teachers who are familiar with tests and testing procedures, instructional materials, teaching methods, and literacy goals. It is this knowledge and the interpretive processes of teachers that make the diagnostic model come alive. For experienced teachers, the model helps them organize and use their knowledge. For those in the beginning stages of teaching, the model serves as a guide for discovering what knowledge they need to develop.

The publication of this book is timely. In a period when many teachers are moving away from dependence on published programs toward the creation of their own literacy programs, they assume a great responsibility for designing appropriate instruction for the individual children in their class. To Michael Kibby, we owe a debt of gratitude for providing a conceptual organizer to guide our thinking about reading diagnosis.

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National-Louis University
The Spencer Foundation

Preface

This monograph presents a diagnostic decision-making model for reading, elementary, and special education teachers to use as a guide in assessing and evaluating students' reading abilities in order to design and provide more appropriate reading instruction. The model not only gives an overall perspective or gestalt of the components and strategies important to successful reading, but more important, it provides a sequence for evaluating those components and strategies in a rational and efficient manner. The model guides the teacher through the process of assessing and evaluating students' reading strategies and abilities, evaluating instructional materials, and developing diagnostic teaching sessions for designing appropriate reading instruction. One major impetus for sharing this model is that many elementary and special education teachers have recently discarded basals, or at least their accompanying teachers' manuals and regimented sequences of materials and skills worksheets, and have instead adopted holistic, child-centered, or literature-based instructional rationales. These teachers thus assume full responsibility for designing reading instruction for each individual in their class, and to do so, they need a conceptualization or cognitive organizer of the components of successful reading and a schema for evaluating each student's reading proficiency in an efficient manner. The decision-making model presented here provides such a cognitive organizer and schema.

Although I take full responsibility for the content of the book, I extend my thanks to Rebecca Barr, Sam Weintraub, Mary Anne Doyle, Jill Fitzgerald, Sheila Valencia, Ardith Cole, and Helen M. Robinson for their comments on this or earlier drafts of the model and the text.

MWK

CHAPTER 1

Rationale and Purpose of the Diagnostic Decision-Making Model

In preparing a proposal for the U.S. National Reading Research Center, the University of Georgia–University of Maryland consortium conducted a poll of International Reading Association members who were classroom teachers, reading teachers, and reading specialists, asking them what they believed to be "important priorities for advancing reading research through the new Center" (O'Flahavan et al., 1992, p. 12). The authors reported that 18 items were rated as significant issues by 50 percent or more of the respondents. Fourth on that list, with 68 percent rating it highly important, was "teacher decision making in the reading program", and fifteenth, with 52 percent rating it highly important, was "teacher development in assessment."

Because many classroom teachers have adopted holistic, literature-based, or child-centered philosophies and methods, these two findings of the Georgia–Maryland survey seem logical; such instructional rationales require teachers to free themselves from the dictum of basal systems (be they eclectic, phonic, or linguistic) and their intrinsically prescriptive regimen of texts to be read, skills to be learned, practice sheets to be completed, and levels tests to be passed. As is the case in gaining any freedom, however, freedom from basals carries with it increased

professional responsibilities—especially decision making and the assessment and evaluation that provide the information for making decisions.

In this text, the combined procedures of reading assessment, reading evaluation, and decision making for reading instruction are identified as **reading diagnosis**. The word "diagnosis" comes from the Greek meaning through or thorough knowledge, and as I conceive it, reading diagnosis is a *process*, not a thing. It is a process of gaining a thorough knowledge of a person's reading performance, strategies, skills, and instructional needs through accurate observations for the purpose of modifying instruction. Because there is much variance in both the reading strategies of children and the instructional paths leading to improved reading, the information needed in reading diagnosis varies from child to child and teacher to teacher. Therefore, it is necessary to ascertain the specific information needed as diagnosis progresses over time. The diagnostic process is essentially a problem-solving process: it requires identifying needed information, obtaining that information, interpreting and evaluating it, and then determining what further information (if any) is needed. Without a conceptual framework or decision-making model, this process may become either haphazard and nondirected or standardized and inflexible.

In general terms, the reading diagnostic process requires a teacher to be able to assess the status of reading performance, strategies, and skills of any child in his or her class and evaluate any child's performance, strategies, and skills in terms of expectations for that child. Further, that teacher must be able to evaluate texts in light of any child's instructional needs (Lipson & Wixson, 1991, p. 57) and then, via diagnostic teaching, assess and evaluate that child's ability to learn and ascertain those instructional conditions necessary for learning. Last, the teacher must be able to integrate all this information and design instruction for the child's continued growth in literacy.

These five sets of tasks—(1) assessing and (2) evaluating a child's reading strategies and abilities, (3) evaluating reading texts, (4) diagnostic teaching, and (5) designing instruction—are essential for reading diagnosis and remedial reading instruction

as conducted by a reading clinician or reading specialist in a clinical environment and as elaborated in many excellent texts in diagnosis and remediation (see, for example, Barr, Blachowicz, & Sadow, 1995; Harris & Sipay, 1990; Lipson & Wixson, 1991; McCormick, 1995). Except for diagnostic teaching, these tasks are also congruent with the diagnostic and instructional portions of Marie Clay's (1993a) *Observation Survey*, used as the basis for her Reading Recovery program (1993b), and with the strategies recommended by Valencia (1990) for portfolio assessment. In literacy-based classrooms, however, teachers assume many of the same responsibilities and goals that are traditional for reading teachers or reading specialists, but classroom and special education teachers are responsible for instruction for children at all reading levels, not just those who have reading difficulties (Holdaway, 1979). Carrying out these five sets of tasks requires knowledge of many special skills, techniques, and materials. Equally pertinent is a rationale that provides a teacher with (1) a gestalt or cognitive organization of the components and strategies important to successful reading and (2) a sequence for assessing and evaluating components and strategies in a rational and time-efficient manner. The diagnostic decision-making model presented here provides both an overall perspective and a rational sequence.

Some Presumptions of the Clinical Diagnostic Decision-Making Model

The Model Reflects an Interactive View of Reading

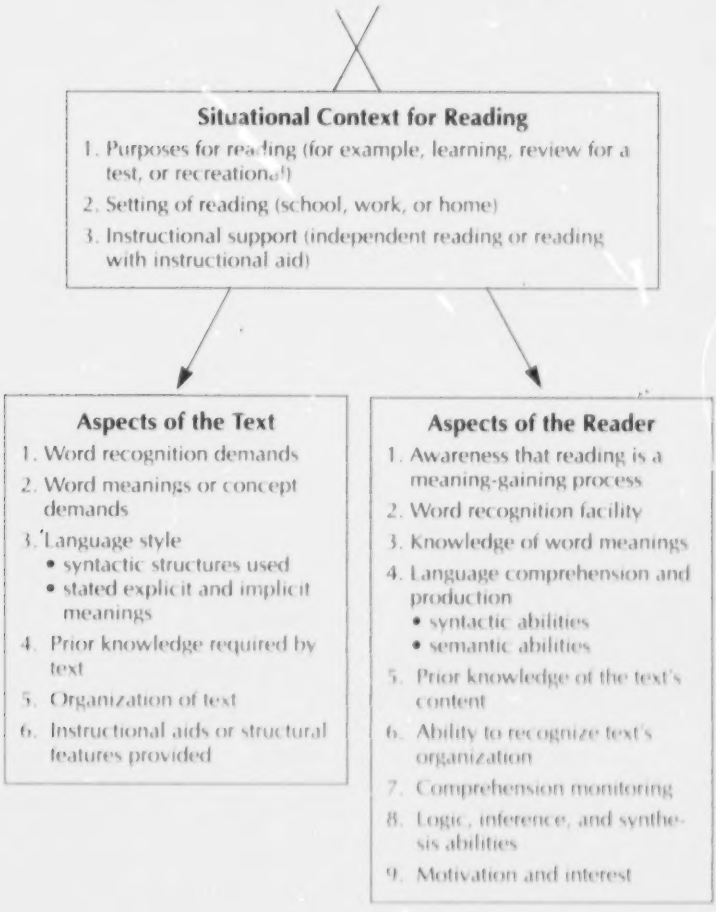
Currently, there are three basic conceptions of the reading process: bottom-up, top-down, and interactive. The bottom-up theory places primary emphasis on the recognition of words, perceives the meaning of a text as residing solely in the text, and views comprehension as only the sum of the bits and pieces of information in the text. The top-down model conceives of reading as an extension of the language acquisition process: the

process of reading is a series of predictions that are confirmed by inspecting the text (that is, meaning precedes reading), and the meaning a reader gains from text is merely a reorganization or extension of the meaning the reader already had before reading the text (Goodman, 1967, 1970). (See Lipson and Wixson, 1991, for a thorough review of these models and the interactive model.)

The interactive model of reading fits between the bottom-up and top-down models and assumes that certain bottom-up and top-down processes occur during the reading process either simultaneously or intermittently. The interactive model holds that the meaning a reader constructs or reconstructs from text is the result of the interaction of three major sources: (1) the *aspects of the reader* that are brought to the reading text and reading situation (Lipson, 1983), (2) the *aspects of the text* being read, and (3) the *situational context* in which the reading act occurs (Harste, Woodward, & Burke, 1984; Rumelhart, 1977). Figure 1 displays the relation of these three components of the interactive model and the specific elements within each.

The diagnostic model presented in this monograph is based on the interactive view of reading, and each of these three components and their specific elements is accounted for in the model. It is true that certain portions of the model appear to reflect a bottom-up view of reading, but the interactive model does not gainsay the importance of word recognition in reading comprehension (Biemiller, 1970, 1979; Ehri, 1989; Hood, 1977; Kibby, 1979, 1989; LaBerge & Samuels, 1974; Weber, 1970). Other parts of the model may appear to reflect a top-down view of reading, but again, the interactive model of reading acknowledges that the prior knowledge a reader brings to a text and that reader's predictions or expectations about that text significantly affect the meaning obtained from the text (Brown, Campione, & Day, 1981; Carroll, 1970; Garner, 1987). Those who have adopted the interactive view of reading will find that they will need the entirety of the model in order to diagnose a child's reading. Those who have adopted either a bottom-up or top-down view of reading will find that only certain portions of the model fit their conceptions.

Figure 1 A Visual Display of the Interactive Reading Process


The Process of Reading Comprehension Is an Interaction Between Aspects of the Reader and Aspects of the Text Within a Situational Context for Reading.
Situational Context for Reading
1. Purposes for reading (for example, learning, review for a test, or recreational)
2. Setting of reading (school, work, or home)
3. Instructional support (independent reading or reading with instructional aid)
Aspects of the Text
1. Word recognition demands
2. Word meanings or concept demands
3. Language style
• syntactic structures used
• stated explicit and implicit meanings
4. Prior knowledge required by text
5. Organization of text
6. Instructional aids or structural features provided
Aspects of the Reader
1. Awareness that reading is a meaning-gaining process
2. Word recognition facility
3. Knowledge of word meanings
4. Language comprehension and production
• syntactic abilities
• semantic abilities
5. Prior knowledge of the text's content
6. Ability to recognize text's organization
7. Comprehension monitoring
8. Logic, inference, and synthesis abilities
9. Motivation and interest

The Diagnostic Model: Not a Guide to Finding Causes of Reading Difficulties

It is a presumption of the diagnostic model that there is never a known cause for a child's difficulty in reading or learning to read. Seventy-five years of research into factors such as vision, hearing, emotions, perception, socioeconomic status, and other variables has lead to the conclusion that there is absolutely no basis to believe that a deficiency lurks somewhere in a child that causes his or her reading problem. Even a casual understanding of the interactive model of reading indicates that there are far too many elements involved in reading and far too many ways to compensate for the limitations of any one element (Stanovich, 1980, 1984) to be able to find a single element or component subset of elements as the cause of a child's reading difficulty. The view that diagnosis is a process of hunting for the child's deficit has long been disproven, and this model is not intended to be used as a guide in finding such causes.

The Interpretive Nature of the Diagnostic Model

The diagnostic model is not an algorithm—that is, it is not a set of lock-step procedures a teacher or clinician follows without thinking. The basic and underlying process of the model is collecting information, evaluating information, determining what further information is needed, collecting more information, and so on. Each of these processes requires the interpretation of information on the basis of the diagnostician's knowledge and experience. The person doing a reading diagnosis is viewed here as a professional with numerous technical skills, not a technician following a step-by-step flowchart.

Responsibilities of the Teacher Using the Diagnostic Model

The diagnostic decision-making model stipulates no specific tests, instruments, materials, goals, or teaching methods. Thus to use the model effectively, teachers must already possess expertise in the materials and methods of literacy assessment and instruction. The following list outlines the requirements of the model and responsibilities of the teacher:

1. The model calls for assessment of certain skills or strategies, but because the model stipulates no tests or checklists, teachers select or develop their own assessment instruments and materials.
2. The model requires evaluating the status or quality of certain strategies and skills; but because the model dictates no expected levels of performance, teachers establish or adopt the standards, levels, or criteria necessary for making the evaluation.
3. The model requires evaluating texts and materials for diagnostic teaching and instruction; but because the model designates no specific texts or materials, teachers identify potentially suitable texts for instruction.
4. The model demands diagnostic teaching as a means of identifying appropriate instructional techniques and materials; but because the model indicates no specific teaching methods or instructional materials, teachers establish the objectives of the diagnostic lessons; select the materials and methods to be tried, and evaluate the effects of the diagnostic teaching.
5. The model calls for designing long-term instruction; but because the model advocates no particular teaching methods, materials, or rationale, teachers establish the long-term goals, select appropriate materials, and continue to evaluate and modify instruction as it continues.

Although this book is written from the perspective of diagnosing an individual child's reading, the five tasks or components may also be applied to small instructional groups.

CHAPTER 2

General Orientation to the Diagnostic Decision-Making Model

Overview of the Presentation of the Model

In reading papers that present a model of some process, sometimes my first look at that model overwhelms me. To avert such a reaction by readers of this text, I will present the diagnostic decision-making model in two parts. Chapter 2 introduces the first part, the central strand or core (in Figure 2 on page 11) that demonstrates the start of the diagnostic process, various major stages in the process, and the expected results from the diagnostic process. The remaining portion and total model will then be presented (in Figure 3 on the center pages in this monograph). This remaining portion of the model (which emanates above and below the central strand) is hierarchically ordered, and an introduction to this hierarchical process will be provided at the end of Chapter 2 by means of two examples with students Roland and Tracy. Chapter 3 then presents a description and explanation of each strand or component of the full model as shown in Figure 3, including an elaboration on the components of the central strand. Further, the specific portions of the text elaborating certain strands or components of the model will be accompanied by blow-ups of the strand or component

depictions in the model. (The term "strand" will generally be used to identify a connected group or string of boxes and circles in the model; the individual boxes will generally be referred to as "components," although I sometimes substitute the terms "variables," "factors," "aspects," "skills," or "strategies" to avoid redundant use of the word component.) Chapter 4 presents a full example of the use of the model, including word recognition and reading comprehension components.

The diagnostic process is guided by five questions:

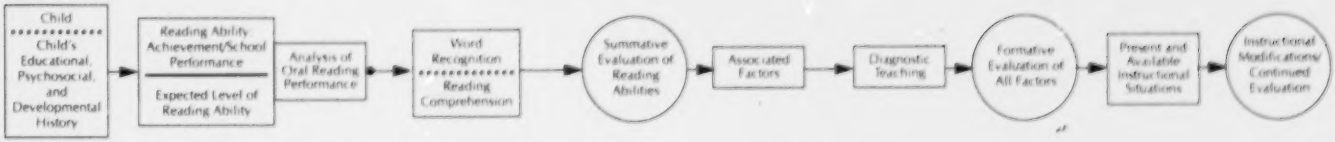
1. What is the child's current level of reading ability and is it satisfactory?
2. Which reading strategies and skills are strengths or limitations for the child?
3. What factors might be associated with the child's reading ability?
4. What are the most favorable instructional conditions for the child?
5. What are the recommendations for the child's reading instruction, and—if necessary—what referrals to other professionals may be needed for evaluation of possible associated factors (such as psychological or linguistic)?

Brief Introduction to the Central Strand of the Model

The central strand or core of the diagnostic decision-making model moves from left to right, as can be seen in Figure 2 on the next page. The starting point is the "Child and the Child's Educational, Psychosocial, and Developmental History" (first box on the left). The ending point is "Instructional Modifications/Continued Evaluation" (the last circle on the right). This left-to-right progression of the model parallels the sequence of assessment, evaluation, selection of materials, and diagnostic teaching.

The second box on the central strand ("Reading Ability: Achievement/School Performance and Expected Level of Reading Ability") represents the process of (1) assessing the child's current reading performance and (2) determining if that perfor-

Figure 2 The Center Strand of the Diagnostic Decision-Making Model



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mance is satisfactory considering the child's expected level of ability. The next stage of the process is "Analysis of Oral Reading Performance," which is followed by an evaluation or decision represented by the small black dot; that decision is, does the child have a reading problem? If the answer is yes, the "Word Recognition/Reading Comprehension" box is next. And if the answer is no, but more information is needed to improve the design of that child's instructional program, then also the "Word Recognition/Reading Comprehension" box is next. It is here that the first upward and downward emanations from the central strand occur. Every diagnosis will include assessments and evaluations of both word recognition and reading comprehension, but the role of this box in the model is to economize time and effort by using previous reading information (reading ability and oral reading) to determine where attention should be focused primarily—on reading comprehension and all its strands and components or on word recognition and all its strands and components. This point will be elaborated later, but I want to make it clear at this early stage that this box does not imply that all of a child's reading problems or instructional needs are either strictly word recognition or strictly reading comprehension, that word recognition and reading comprehension are unrelated, or that word recognition and reading comprehension are the only two important skills or strategies in reading.

Next on the central strand is the first circle "Summative Evaluation of Reading Abilities." Each of the three circles on the model indicates a point of reflection in which one or more of the five questions guiding the diagnostic process is answered. The first two questions are answered in the first circle (What is the child's current level of reading ability and is it satisfactory? and Which reading strategies and skills are strengths or limitations for the child?). This circle is followed by the "Associated Factors" box, which indicates the process of ascertaining if any environmental, physical, linguistic, psychological, or other factor might be associated with the child's reading ability. The next step, indicated by the "Diagnostic Teaching" box, is to evaluate the student's learning in various instructional conditions—perhaps the

most important step in diagnosing and certainly the most often overlooked.

The "Formative Evaluation of all Factors" circle is next, which indicates that the content and nature of the necessary reading instruction are formulated using all the information collected and summative evaluations made; this also answers the third and fourth questions guiding the diagnosis (What factors might be associated with the child's reading ability? and What are the most favorable instructional conditions for the child?). After taking into account "Present and Available Instructional Situations" and adjusting these formative evaluations, if necessary, the recommended instructional modifications are stated and implemented (the last circle); here, the last of the five questions is answered (What are the recommendations for the child's reading instruction, and—if necessary—what referrals to other professionals are needed for evaluation of possible associated factors?).

Brief Introduction to the Upward and Downward Emanations

As can be seen from Figure 3 of the full model in the center of this monograph, there are three sets of emanations outward from the center strand (above and below): (1) from the "Word Recognition/Reading Comprehension" box are the specific word recognition and reading comprehension components that must be taken into account; (2) from the "Associated Factors" box are the linguistic, physical, and affective factors that may or must be taken into account; and (3) from the "Diagnostic Teaching" box are the aspects of the reader and text that must be taken into account in selecting appropriate methods and materials for instruction.

The Key

Note that some components above and below the center strand are encased in solid-line boxes, others in broken-line boxes, and some are just underscored. As indicated in the key, solid-line boxes and circles designate an essential component in

the diagnostic process—that is, no diagnosis can be complete without an evaluative decision on each of these components. For example, the center strand of the model is the core of the diagnostic process, thus decisions regarding each of these components must be incorporated in any diagnosis; ergo, all these sequences are enclosed in solid lines. Solid lines are also used to encase the components "Sight Vocabulary," "Context Strategies for Word Recognition," "Word Analysis Strategies: Segmenting/Synthesizing of Written Words," and "Nondirected Reading of Narratives and Expositions." This means that the diagnostic process must result in evaluative statements about each of these components—however, evaluation does not necessarily mean specifically assessed or tested.[1] If, for example, it is observed during oral reading (the third box on the center strand) that a third grade girl has minimal difficulty identifying words as sight vocabulary on third and fourth grade text and that she excellently employs word analysis strategies on those few words not recognized automatically, then it is possible to formulate evaluative statements about "Sight Vocabulary" and "Word Analysis Strategies: Segmenting/Synthesizing of Written Words" without administering specific tests of those abilities or strategies. If, however, she did not apply word recognition strategies to identify those few words not instantly recognized, then the "Word Analysis Strategies: Segmenting/Synthesizing of Written Words" component must be specifically assessed in order to develop an evaluative statement or position on the girl's knowledge of word analysis strategies.

Many—indeed, most—of these variables above and below the central strand are enclosed in broken lines, indicating subordinate components. The black dots signify stop-decision points, at which a teacher must make an evaluation and decide if these subordinate-level reading abilities or associated factors must be specifically assessed in order to be evaluated. A teacher's evaluation of a child's reading must account for every variable or component (indicated by a box, broken-line box, circle, or underline); however, "account for" is not to be interpreted to mean specifically assess or test. Because of the hierarchical ordering of the model, information used to account for a

variable may be gleaned from more general measures or presumed on the basis of ability to employ higher order strategies or skills; although sometimes it must be obtained by individually assessing the specific variable.

Examples of the Hierarchical Arrangement of Components

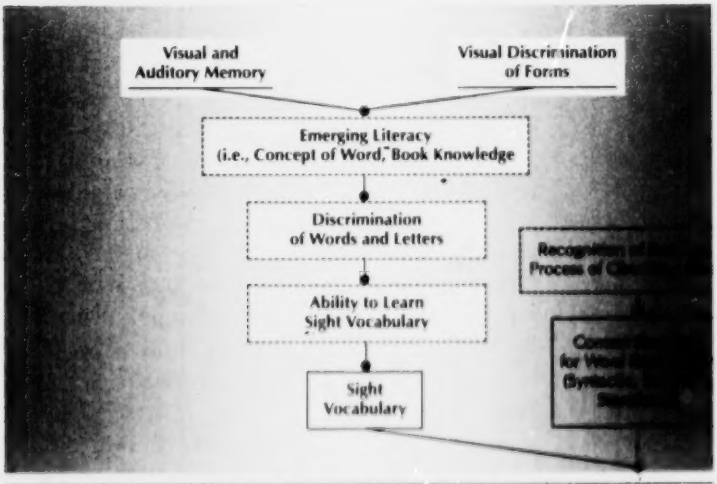
Let me demonstrate the hierarchical arrangement of the components of the model (the upward and downward progression) with two short examples using only the sight vocabulary strand of the upward, word recognition component. Later in the book, after I discuss each strand and component of the model, another more fully developed example will be presented of the downward progression through reading comprehension.

Suppose while assessing and evaluating the oral reading strategies of Roland, a mid-fifth grader, his teacher finds that Roland is able to read second and third grade material with few significant errors and adequate comprehension of explicitly stated information; but on fourth grade material, he struggles with the harder words in the passage such that his comprehension suffers. His teacher concludes that one difficulty Roland has in reading is word recognition (the "Word Recognition" portion of the "Word Recognition/Reading Comprehension" box); thus she will move upward (visually this is up on the model, but hierarchically, it is down) and assess and evaluate Roland's word recognition skills and strategies—specifically Roland's sight vocabulary. (She should also assess and evaluate Roland's context strategies and word analysis strategies, but only sight vocabulary will be used to demonstrate the hierarchical arrangement of the components of the upward and downward strands.) Based on Roland's limited proficiency in recognizing certain harder words in oral reading, the evaluation (judgment) that he might have a word recognition difficulty, especially with sight vocabulary, is logical; thus further assessment of Roland's sight vocabulary is viewed as appropriate (for example, by assessing his recognition of a sample of words he has been taught previously during the school year).

But even before assessing sight vocabulary more fully, Roland's teacher knows it is not necessary to test his "Ability to

Learn Sight Vocabulary" (the broken-line box above the "Sight Vocabulary" box) because his ability to read orally second and third grade material demonstrates he has a sizable enough sight vocabulary to conclude that he has the ability to learn words (it is just not as sizable as is expected). To be sure, Roland's reading instruction will no doubt incorporate a sight vocabulary component, but it would seem reasonable to conclude that no extraordinary teaching methods will be needed, as he has already learned to read hundreds of words.

Tracy serves as a second example to demonstrate this hierarchical process, again using only the word recognition and sight vocabulary strand to keep this introductory section brief and direct. Tracy, a mid-year second grader, is unable to read any contextual material, even stories that she has orally composed and the teacher has printed for her. The teacher's evaluation is that Tracy has no apparent word recognition abilities, and therefore she assesses Tracy's sight vocabulary. The teacher finds that Tracy has no sight vocabulary, although she is able to identify a few words in their environmental contexts.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Ability to Learn Sight Vocabulary
Sight Vocabulary

Because the ability to learn sight vocabulary is essential to learning to read and beginning readers' success in learning sight vocabulary is highly correlated with future reading ability (Barr, 1971; Durkin, 1973–1974), it is necessary to determine if Tracy is capable of learning words as sight vocabulary when given individual instruction (the "Ability to Learn Sight Vocabulary" box). Selecting a set of four words varying in length and part of speech from Tracy's oral language, the teacher teaches Tracy the words and assesses her ability to recall them or identify them in short text. Tracy does not learn to recognize any of the four words taught, so the teacher starts over teaching only two words. Again, Tracy learns neither. Because Tracy did not learn words when given individual instruction, the teacher is concerned about Tracy's ability to determine if two printed words are different or the same (the next box, "Discrimination of Words and Letters"). The teacher finds that when Tracy is presented with pairs of words that are the same, she recognizes them as the same; and with words that are very dissimilar (for example, boy and elephant), she recognizes them as different; but when the words are different but similar (boy and toy, barn and bed), Tracy identifies them as the same. The teacher's evaluation is that Tracy has developed an awareness of word length and beginnings of words, but has not yet developed cognizance of word endings or the internal orthography of a word. Tracy, however,"cannot only identify the names of each of the letters of the alphabet, but she also does not confuse any two letters. Tracy's difficulty with word discriminations causes the teacher to wonder if Tracy has developed a concept of word (Morris, 1992)—that is, does Tracy recognize that text is made up of words and that words in text are bounded by white space (the "Emerging Literacy" box)? The teacher assesses Tracy's concept of word by having Tracy point at each word of a memorized poem as she reads it orally (Morris, 1992) and finds that Tracy readily points out each word, but when Tracy is asked to find within a designated line of print a word beginning with a specific letter, she is unable to do so. When given a small book (again, the "Emerging Literacy" box in the sight vocabulary strand), Tracy is readily able to identify its cover and back, and

she can tell the teacher where one would start reading (Clay, 1993a, 1993b). Additional information is needed about Tracy's literacy skills (for example, listening comprehension, and phonological awareness), but the teacher now knows that one focus of Tracy's instruction must be teaching her how to look at the internal aspects of a word, which when learned must be followed by the acquisition of sight vocabulary.

The Underlined Components

Underlined components deserve special mention. Like broken-line boxed components, they are considered only after a child has demonstrated limitations in higher order components. The underlined components, however, are all tangential to reading and do not come into play until it has been found that the child is unable to learn any reading skills—which means that these tangential skills are never assessed! In 26 years of diagnosing and teaching school-aged children, I have never found it necessary to assess a specific child's visual discrimination of forms or auditory memory of numerals or isolated words. One might ask then, why keep these tangential components in the model? They serve a useful purpose; indeed, they are the genesis of the model itself. Over the years, I have seen innumerable reports of diagnoses done by some reading teachers and many school psychologists in a variety of educational or psychological clinics; hundreds of these reports have included the testing of "perceptual skills," even if the child being tested had already learned to read (albeit, not well), already possessed a substantial (though not sufficient) sight vocabulary, and was able to deploy some (but not enough) graphophonic strategies. There is no need to determine a child's status on perceptual skills when the child has already learned even a few of the reading strategies or skills that these perceptual skills are thought to precede. It was once theorized that the dominant perceptual modality of a child's reading instruction should match his or her modality preference or strength as determined by tests of auditory and visual discrimination and memory (for instance, this theory stipulated that a child with a stronger visual modality than auditory should be taught by visual or sight vocabulary instruction). De-

spite the fact that dozens of research studies since the mid-1950s (see, for example, Robinson, 1972) have provided data that undermine the validity of this theory, I still see report after report in which the Wechsler Intelligence Scale for Children–Revised (WISC–R) or WISC–3 subtest patterns and the results of various perceptual tests are analyzed and used as the basis for recommending that a child receive a visual-based or auditory-based instructional program. These perceptual skills are left in the model as a reminder that they are to be assessed only when a child has absolutely no reading or literacy strategies at all and is unable to learn any single reading strategy with direct instruction—which never happens—thus these perceptual skills should never be directly assessed in any reading diagnosis.

Note

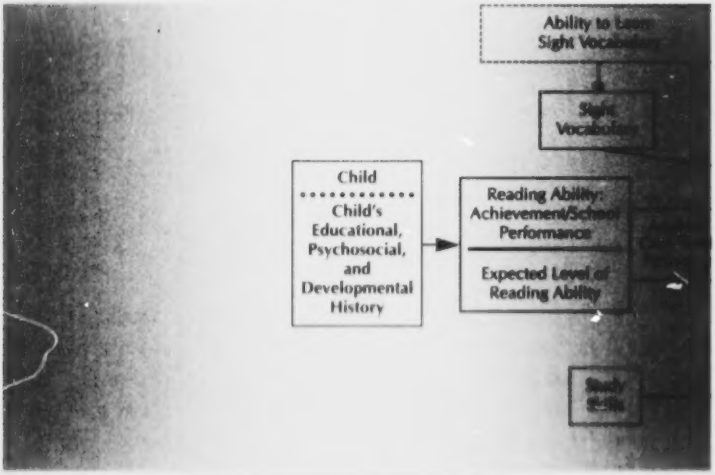
Perhaps it would be useful to differentiate the terms "assessment" and "evaluation." Assessment means to make some estimation or measurement; for example, this 12-year-old student is 72 inches tall, or the difficulty level of text that this fourth grade student is able to read is first grade. There is no merit or evaluation connoted by assessment, rather, just statements of how much or to what degree. When measures of how much or to what degree are judged in terms of quality or compared to some criterion, then this is evaluation; for example, the 12-year-old student who is 72 inches tall is *very tall* for his age, or the fourth grade student able to read only first grade materials has a *reading problem*.

CHAPTER 3

The Diagnostic Process

Background

The first box of the diagnostic model is the "Child and the Child's Educational, Psychosocial, and Developmental History." To put the child's reading performance in proper perspective, a teacher, especially a reading teacher or reading clinician, must gather and integrate as much background information as possi-


Child
Child's Educational, Psychosocial, and Developmental History
Reading Ability: Achievement/Schl Performance
Expected Level of Reading Ability

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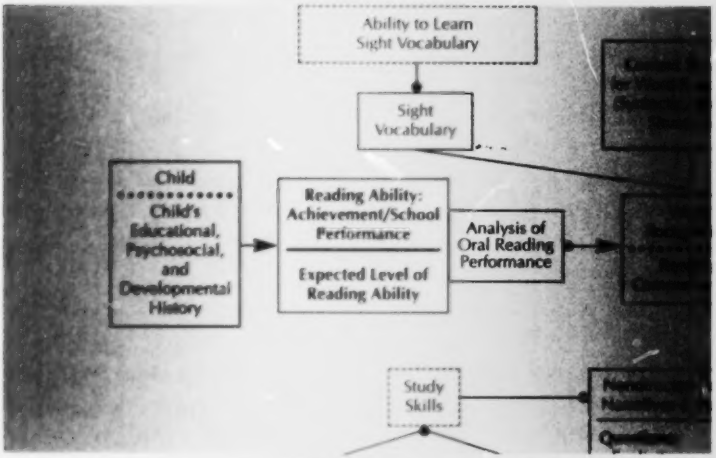
ble. Using questionnaires and interviews, the teacher should learn what he or she can about past and present physical conditions, psychosocial background, educational history, and the child's previous educational programs. It is obvious that past problems cannot be remedied in the present, but there are pertinent reasons why such information is valuable. First, collecting all previous data and reports may eliminate the need to do some assessment work because someone else has collected the information. Second, background data provide a more complete picture of the child in his or her total environment; the child does not live in a vacuum, and background information including the insights and perceptions of others will help the teacher understand the total child. Third, knowledge of previous reading instruction that has succeeded or failed will certainly guide the teacher's own instruction. Fourth, many parents and professionals believe that a child's reading problem stems from some specific cause or anomaly; and although this is never the case, awareness of the parents' belief will make the teacher better able to discuss the child's reading with the parents and address their concerns and worries. Fifth, some aspects of a child's background (for example, punitive and emotional parental instruction or turmoil due to some tragic event) may be detrimental and ongoing. In these instances, it may be necessary to eliminate or accommodate these factors.

What is the Child's Current Level of Reading Performance and Is It Satisfactory?

Reading Ability

As is the case for all five questions, this first question consists of both assessment and evaluation components: namely, what is the child's current level of reading performance, and is that level satisfactory in terms of expectations for the child? On the model, these questions are demonstrated in the second box from the left, "Reading Ability: Achievement/School Performance



and Expected Level of Reading Ability." There are several methods available for assessing reading ability (such as achievement tests, commercially prepared informal reading inventories, criterion-referenced tests, portfolio assessments, and teacher-prepared informal reading passages), but as indicated earlier, this book will not recommend specific instruments or materials, leaving that to teachers' professional judgment. Johnston (1992) provides excellent information about and methods for assessing reading proficiency, and Valencia's (1990) guidelines for using portfolios in assessment are also highly instructive and particularly insightful.

Having observed children's reading instruction every day, many classroom teachers believe that no formal assessment (not to be interpreted necessarily as standardized testing) of the children's reading is necessary, thinking that their ability levels are accurately stated by the level of materials they read in class. The problem with this is that if a child has been reading satisfactorily at a second grade level for a few months, a teacher may have never assessed objectively the child's reading to see if he

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or she is able to read more difficult material (Rist, 1970). Indeed, 25 years ago I observed that 90 percent of the children diagnosed and taught in our reading clinic were reading materials in school remedial reading programs that were one, two, or three grades *too difficult* for them; but today, I find that 75 percent of the children that we diagnose who are receiving remedial reading or are in learning disability classrooms are reading material that is one or two grades *too easy* for them. It is important to stop and formally assess the child's reading in an objective manner.

Expected Ability

Reading assessment may result in a standard score from a standardized achievement test or a list of the grade levels of material the child can and cannot read. Whatever the scale, assessment should result in a metric that allows a teacher to ascertain if the child's reading ability is commensurate with expectations of the child. The line between "Reading Ability" and "Expected Level of Reading Ability" indicates that a direct comparison of performance on these two variables is necessary.

The majority of children in most elementary classes will usually be progressing in reading and other curricular areas at a rate that is both satisfactory and commensurate with normal expectations. A major concern with children performing at an average level for their grade is whether the intellectual level of extremely intelligent children has been vastly underestimated; in this case, a teacher could underestimate the reading level the children could attain. An equally important matter is whether the intellectual level of those children performing below average in reading has been underestimated; this may result in teachers accepting lower reading levels as the best the children can do. Both of these are legitimate concerns, so most teachers usually need further, objective information about the verbal or intellectual abilities of their students.

How are those expectations determined? The usual measures of expectation are group- or individually administered intelligence tests or tests of listening vocabulary. It is common for standardized group-intelligence tests to be routinely adminis-

tered in the primary grades, with the results entered into children's permanent files. If such data are not available in the files, some professionals suggest that listening comprehension tests be administered (Stanovich, 1989); although teachers need to be aware that some children with normal or above-normal intellectual ability perform below average on both reading and listening tests, and in this case, those children would be mistakenly estimated to be achieving in line with expectations. Another method to measure expected reading ability is to use the child's level of performance in academic areas other than reading (math, for example) as a guide, but the caveat applied to listening comprehension also applies here. In those cases in which a child's reading is well below the average level and in which there is a basis for concern about the child's verbal ability that cannot be answered by researching the records, giving listening comprehension assessments, or contrasting performance in various subject areas, then the teacher should consider having the child's verbal ability assessed.

Many consider testing a child's verbal ability an anathema, often because of the shortcomings of verbal ability tests. There is no question that standardized tests of intellectual or verbal ability suffer extreme limitation, but the alternative to such measures is to rely on intuitions or observations, based on myriad unknown and possibly invalid variables. Another alternative, equally problematic, is simply to assume that every child should be reading at his or her age or grade level; but this *may* not expect enough of children of extremely high verbal ability. There is, of course, comprehensive literature on the advantages and disadvantages of intelligence and vocabulary tests for estimating a child's aptitude for learning; indeed, there is a sizable body of literature on the validity of even asking such a question. Although any discussion of this topic that is short of book length is abbreviated, reality dictates that in the classroom teachers need to make decisions about the expected level of performance of specific children; thus, I will provide a brief set of guidelines.

The traditional method of determining a child's expected level of reading performance (expectancy) has been to enter IQ or listening vocabulary scores into any one of several ex-

pectancy formulae, sometimes referred to as discrepancy formulae. The rationale of these formulae is that for a child to have a reading problem, that child's reading ability must be significantly lower than his or her intellectual ability—that is, the child should exhibit a gap or discrepancy between his or her intellectual ability and reading ability. Since the first discrepancy formula was introduced in 1920, there has been considerable controversy about the concept and measurement of expectancy (Kavale, 1987). Guidelines that result from a review of the literature on establishing or determining a child's expected level of academic achievement are important to elementary, special education, and reading teachers as well as to school psychologists. (For those interested in reviewing this subject, see the entire issue of the October 1989 *Journal of Learning Disabilities*; Fletcher et al., 1992; Kavale, 1987; Reynolds, 1984–1985, 1990; B. Shaywitz et al., 1992; S. Shaywitz et al., 1992.) Basically, there are three guidelines. (Although I indicated at the onset of this book that I would generally refrain from stating specific guidelines for evaluating the quality or level of performance, the question of reading expectancy is too significant and too much controlled by short-sighted legislation to skirt.)

1. For the majority of elementary school children there is no need for a discrepancy formula. Except in certain exceptional cases (for example, when a child is severely emotionally disturbed), all children with high-average, average, and low-average IQ or listening vocabulary scores should be reading at least at grade level in the grade in which they are enrolled; in other words, discrepancy formulae are not needed for children with IQ or listening vocabulary standard scores between 80 and 120. Justification for this guideline is found in the fact that correlation coefficients between reading and intelligence (or listening vocabulary) are low in the beginning grades (approximately .35 to .45) and the fact that a significant proportion of children with low IQ scores (80 to 90) display grade-level reading (Bond & Clymer, cited in Bond & Tinker, 1973; S. Shaywitz et al., 1992).

This guideline holds even for those children who learn more slowly than their average peers. A child with limited verbal aptitude (a child with a valid IQ of 84) is, by definition, a slower learner, and thus needs more time to learn the same information and strategies that others learn more rapidly. However, in learning to read, this slowness is not an excuse for letting that child fall further and further behind (reading a grade below average-ability peers); instead, it demands that the school provide what is necessary for the child to keep up:

1. increased instructional time: minutes per day, hours per week, weeks per year;
2. the highest quality special instruction possible; and
3. the most appropriate instructional situation—including even one-to-one instruction.

2. For children with extremely limited intellectual abilities (a valid IQ less than 80) it is appropriate to use expectancy formulae to determine an expected level of reading achievement. Great caution must be used in applying these formulae to children with limited intellectual abilities raised in extremely low socioeconomic conditions; and of course, if a child's English is not fluent, use of an expectancy formula is inappropriate.

3. For students with superior IQs or listening vocabulary, a general conclusion from the research is that discrepancy formulae are useful (B. Shaywitz et al., 1992); for example, for children with IQ or listening vocabulary standard scores above 126, discrepancy scores may be useful. The basis for this is that average achievement by bright children may be expecting too little and that a child with an IQ of 130 who reads at grade level would benefit from additional instruction.

Analysis of Oral Reading

There is a large number and variety of tests and materials to use for collecting oral reading protocol and comprehension of

materials read orally, not the least of which is the teacher-prepared informal reading inventory. In addition to standard texts in reading diagnosis and remediation, Johnston (1992) and Goodman and Burke (1972) are excellent resources for guidance in collecting and analyzing oral reading protocol. Such information is also provided in the manuals accompanying commercially available informal reading inventories. For elementary school children, the evaluation of oral reading may be the most important diagnostic step. Oral reading certainly is not the same as silent reading, but it is the avenue that allows an observer to approximate best what it is that readers do when they read silently. Actually, for first, second, and third grade readers, there may be little difference between silent and oral reading, except they may read better when reading orally.

Note that the "Analysis of Oral Reading Performance" box abuts the "Reading Ability and Expected Level of Reading Ability" box. This is because in certain cases the result of the contrast of reading ability with expected level of reading ability does not always fully answer the question of whether the child's reading level is satisfactory in terms of expectations for the child. In

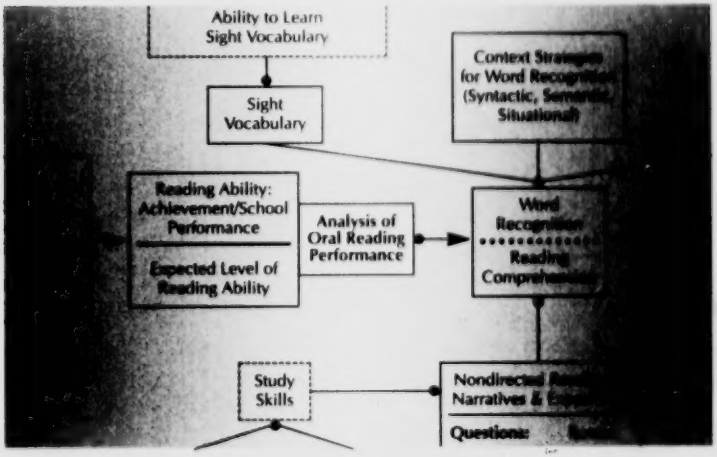

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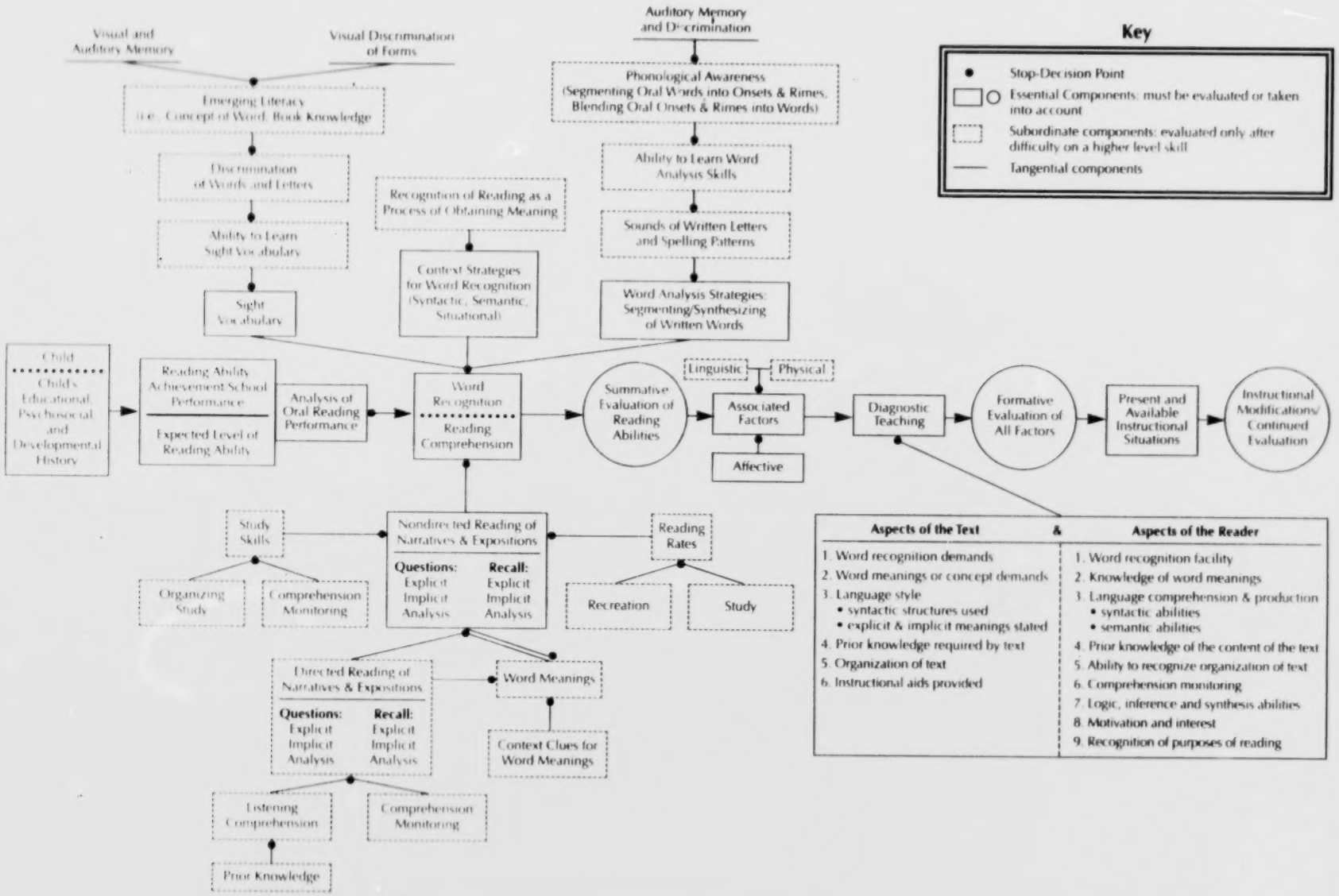
Figure 3 The Diagnostic Decision-Making Model
Michael W. Kibby, The Reading Clinic, University at Buffalo


Visual and Auditory Memory
Visual Discrimination of Forms
Auditory Memory and Discrimination
Key
Stop-Decision Point
Essential Components: must be evaluated or taken into account
Subordinate components: evaluated only after difficulty on a higher level skill
Tangential components
Emerging Literacy (i.e., Concept of Word, Book Knowledge
Phonological Awareness (Segmenting Oral Words into Onsets & Rimes, Blending Oral Onsets & Rimes into Words)
Discrimination of Words and Letters
Ability to Learn Word Analysis Skills
Recognition of Reading as a Process of Obtaining Meaning
Ability to Learn Sight Vocabulary
Sounds of Written Letters and Spelling Patterns
Context Strategies for Word Recognition (Syntactic, Semantic, Situational)
Sight Vocabulary
Word Analysis Strategies: Segmenting/Synthesizing of Written Words
Child
Child's Educational, Psychosocial and Developmental History
Reading Ability
Achievement School Performance
Expected Level of Reading Ability
Analysis of Oral Reading Performance
Word Recognition
Reading Comprehension
Summative Evaluation of Reading Abilities
Linguistic
Physical
Associated Factors
Affective
Diagnostic Teaching
Formative Evaluation of All Factors
Present and Available Instructional Situations
Instructional Modifications/ Continued Evaluation
Study Skills
Nondirected Reading of Narratives & Expositions
Questions: Explicit Implicit Analysis
Recall: Explicit Implicit Analysis
Reading Rates
Organizing Study
Comprehension Monitoring
Recreation
Study
Directed Reading of Narratives & Expositions
Questions: Explicit Implicit Analysis
Recall: Explicit Implicit Analysis
Word Meanings
Context Clues for Word Meanings
Listening Comprehension
Comprehension Monitoring
Prior Knowledge
Aspects of the Text
1. Word recognition demands
2. Word meanings or concept demands
3. Language style
• syntactic structures used
• explicit & implicit meanings stated
4. Prior knowledge required by text
5. Organization of text
6. Instructional aids provided
&
Aspects of the Reader
1. Word recognition facility
2. Knowledge of word meanings
3. Language comprehension & production
• syntactic abilities
• semantic abilities
4. Prior knowledge of the content of the text
5. Ability to recognize organization of text
6. Comprehension monitoring
7. Logic, inference and synthesis abilities
8. Motivation and interest
9. Recognition of purposes of reading

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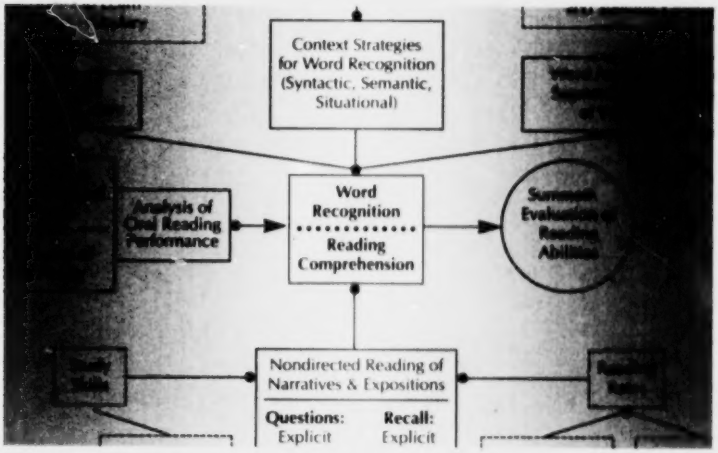
some cases, a child's measured reading ability is so far below his or her verbal level that the existence of a reading problem is readily apparent. This is when the application of the "Analysis of Oral Reading Performance" box assists the teacher in beginning to identify reading strategies and skills that are strengths or limitations for the child. There are other children, however, for whom the reading ability and reading expectancy difference is less clear, particularly if the child has above or below average intellect. In these cases, analysis of oral reading assists the teacher in determining the existence of a reading problem and gives insight into the child's strategies and skills. It is because of this dual use of oral reading that the "Analysis of Oral Reading Performance" component is placed directly next to the "Reading Ability and Expected Ability" component and at the same time is enclosed in its own separate box.

The black dot affixed to the "Analysis of Oral Reading Performance" box indicates that decisions are mandatory at this point. Those decisions involve determining the child's current level of reading ability and whether that level of attainment is satisfactory. Whether there is or is not a reading problem, further analysis is required to gain a full picture of the child's strategies and skills in reading in order to design instruction specifically for that child.

Which Reading Strategies and Skills Are Strengths or Limitations for the Child?

The model designates five major categories of reading abilities: word recognition, meaningful vocabulary, reading comprehension, rates of reading comprehension, and reading study skills. In the model, these five categories are placed in either of two branches: word recognition and its strands are one branch, and reading comprehension, meaning vocabulary, rates of reading, and reading study skills (and their strands) make up the reading comprehension branch. The distinction between the two branches is not absolute, and it is recognized that comprehension aids word recognition (Goodman, 1967), and that with-



out word recognition, there is no reading comprehension. All diagnoses must evaluate specifically some variables in both the "Word Recognition" component and the "Reading Comprehension" component. Note by the solid-line boxes that it is mandatory in every diagnosis to make evaluations of (though not necessarily specifically test or assess) sight vocabulary, context strategies for word recognition, word analysis strategies (phonics), and performance levels of nondirected reading comprehension of narrative and exposition texts. The "Word Recognition/Reading Comprehension" differentiation serves to group together similar competencies and strategies, allowing teachers to focus diagnostic efforts more specifically and to order the procedures by priorities, resulting in economy of time and effort and clarification of the purposes of specific diagnostic procedures used.

Word Recognition

If recognizing words is difficult for a child, as indicated by reading level and oral reading, then an examination of his or

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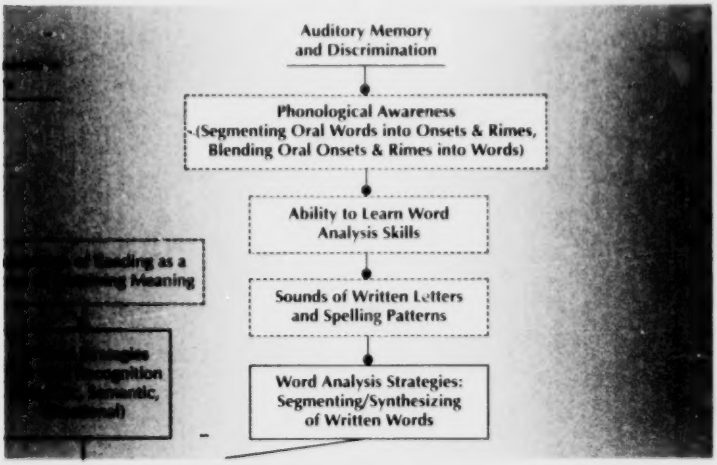
her word recognition skills is called for. This requires movement upward from the center strand of the model to "Context Strategies for Word Recognition," "Word Analysis Strategies," or "Sight Vocabulary." If the teacher's evaluation (black dot) is that the child has difficulty on assessments of any of these strategies, this necessitates continuing to subordinate skills or strategies (broken-line boxes).

SIGHT VOCABULARY. An explanation of the sight vocabulary strand components and the use of their hierarchical arrangement was explained in the first two examples with students Roland and Tracy.

WORD ANALYSIS STRATEGIES. If a child has difficulty identifying a word in context or in isolation (for example, the word "flat"), what is the child's skill at segmenting the written word into appropriate components and sounds ("fl" and "at" or "fl," "a," and "t") and then synthesizing or blending the component sounds into the word? If these skills are limited, can the child provide any appropriate sounds of letters and spelling patterns when the


Auditory Memory and Discrimination
Phonological Awareness (Segmenting Oral Words into Onsets & Rimes, Blending Oral Onsets & Rimes into Words)
Ability to Learn Word Analysis Skills
Sounds of Written Letters and Spelling Patterns
Word Analysis Strategies: Segmenting/Synthesizing of Written Words

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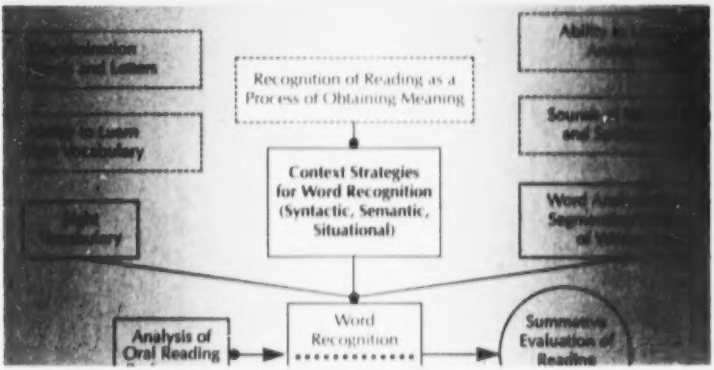
teacher segments a written word? If these tasks are beyond the child's abilities, the teacher needs to assess the child's ability to learn word analysis strategies by designing two or three mini-lessons to teach the child to recognize the beginning (onset, as in "b" in bat) or the end (the rime or the vowel plus what follows, as in "at" in bat) of words with the same beginning or ending sounds. If the child is utterly unable to learn even one or two of these onsets or rimes, then the teacher will need to explore the child's phonological awareness (segmenting/blending of onsets and rimes) to determine if the child can segment a spoken word into its beginning and ending sounds (for instance, can the child say the sounds at the beginning and the end of the word "fat?"). If this abstraction or segmenting is too difficult, can the child blend the onset and rime into a word when they are pronounced (if you say the word begins with /f/ and ends with /ăt/, can the child produce the word?)? If the child's phonological awareness skills are limited, insight into his or her understanding of the orthography might be gained by analyzing invented spelling of simple words. For an explanation of methods and materials of assessing and evaluating phonological awareness and invented spelling, see Bradley and Bryant, 1983; Ferroli and Shanahan, 1987; Goswami and Bryant, 1990; Share et al., 1984; Stanovich, 1988; and Templeton and Bear, 1992.

Context Strategies for Word Recognition (Syntactic, Semantic, Situational). A child's ability to identify words by the syntactic and semantic cues of a passage or by using the general intention or situational context of a text (sometimes called pragmatics, Halliday, 1975; Harste, Woodward, & Burke, 1984) is usually ascertained by analyzing oral reading. The component "Context Strategies for Word Recognition" is identified to focus the teacher's attention when evaluating a child's total word recognition ability. Again, standard texts in diagnosis and remediation address the analysis of oral reading protocol, although Johnston (1992) and Goodman and Burke (1972) give more in-depth coverage and explicit materials and examples. It is necessary, however, to be sure that evaluations of a child's use of context for word recognition are made on materials the child reads with rel-


Recognition of Reading as a Process of Obtaining Meaning
Context Strategies for Word Recognition (Syntactic, Semantic, Situational)
Analysis of Oral Reading
Word Recognition
Summative Evaluation of Reading

ative accuracy (usually no more than 12 percent grammatically unacceptable miscues). When material is so difficult that the child miscues on every fourth or fifth word, so little meaning is gained that the child has no context with which to operate. Indeed, using Goodman's and Burke's (1972) criteria for classifying the grammatical acceptability of miscues, I (1979) found that when very difficult text was read, 76 percent of my sample of 46 students with reading difficulties was classified as demonstrating a weakness in context use; but when these same students read less difficult text—on which they were still making 7 to 10 percent errors—74 percent of them demonstrated a strength in context use.

Note that the indicated prerequisite ability for using context as a word recognition skill is "Recognition of Reading as a Process of Obtaining Meaning." Children who have had a strong phonics or code-emphasis program sometimes view accurate word calling as the goal of reading and fail to note that reading is supposed to make sense (Holdaway, 1979).

Reading Comprehension

NONDIRECTED READING. The first variable in the "Reading Comprehension" branch is the "Nondirected Reading of Narratives and

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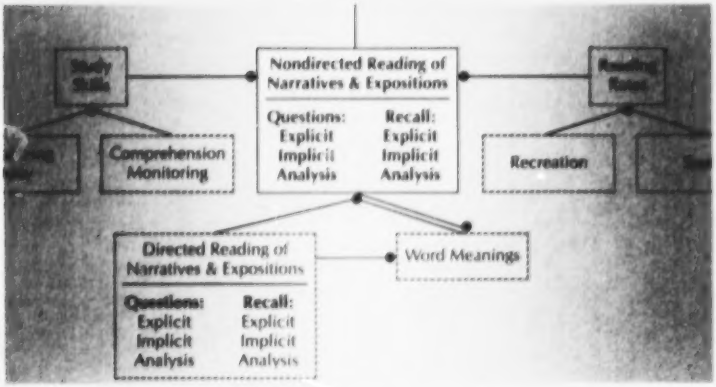


Expositions" box, which also contains "Questions: Explicit, Implicit, and Analysis" and "Recall: Explicit, Implicit, and Analysis." At this juncture, the teacher needs to know what level and genre of material the student is able to read—*silently*—without assistance (which I call the independent level). The teacher selects and prepares text for the child to read as a nondirected activity (NDRA) without teaching sight or meaning vocabulary, without setting purposes, without establishing background, and so forth. This box looks far more complex than it is, so each of the three points—the two genres of text, the use of questions and recall, and the three levels of comprehension—will be elaborated.

First, the model calls for nondirected reading of two genres: narratives (stories and novels) and expositions (information and opinions). Not only is it important to know a student's ability to read both genres, but it is also useful to know if there are variations in his or her ability to process different forms of expositions (for example, science or social). Most instructional time in reading is devoted to stories, not expositions (Barr & Sadow, 1988), yet once students reach the upper elementary grades, the majority of their reading outside of reading instruction is expositions. The abilities and strategies required for reading ex-

pository text are not identical to those needed for reading stories, thus to design and implement instruction to help a student read content materials a teacher must assess that student's ability to read expositions. Again, these texts should be read silently, although beginning readers often do their silent reading out loud.

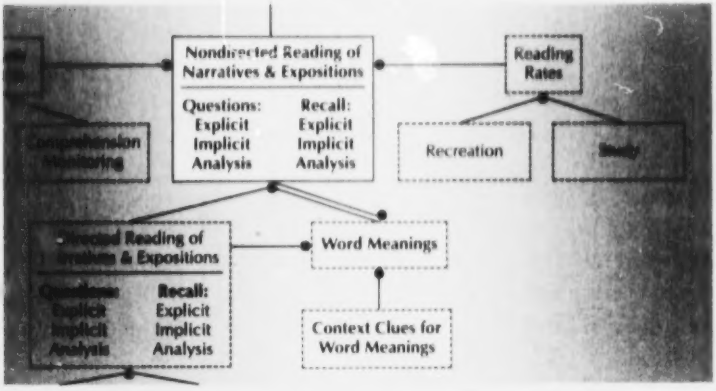
Second, it is important that this NDRA inform the teacher if the child is able to recall explicitly stated and implied information without numerous prompts or if the child is able to supply such information only when asked specific questions. This is an important point, as after silent (or round-robin) reading, teachers often ask questions (Durkin, 1978–1979). Considerable evidence exists, however, that long-term recall of information is enhanced by requiring students to recall information instead of answer questions (Singer & Donlan, 1989; Wittrock, 1991). Further, the requirement for recall and the practice of reading for recall purposes has been thought to facilitate the development of comprehension monitoring processes (Garner, 1987). Because recall or retelling is not a common classroom activity however, in the diagnostic situation a teacher should not evaluate comprehension solely on the quality of a child's retelling but should be prepared to ask questions about the content read should the child's retelling fail. If the child demonstrates adequate comprehension when asked questions, but not when asked to retell, the child (1) can comprehend text at this level, but (2) needs to develop the ability to retell or recall the text without excessive questions or probing.

The third important point about this "Nondirected Reading of Narratives and Expositions" component is that it identifies three levels of comprehension: recall of information explicitly stated in the text, recall of information that is only implied in the text, and ability to analyze aspects of the information presented in the text in a critical manner. As mentioned earlier, studies that have examined postreading activities find that teachers most commonly ask questions and that most of those questions require answers from only explicitly stated information (Barr & Sadow, 1988; Durkin, 1978–1979; Guszak, 1967; Hodges, 1980). Yet, there are more and more calls for critical reading by

teaching students not only to comprehend points in text that are explicitly stated but also to comprehend implied information and to apply "logic, inference, and synthesis" to reading texts (Venezky, Kaestle, & Sum, 1987, p. 43). The model designates logic, inference, and synthesis abilities as "Analysis."

Success on a given NDRA passage is usually measured in terms of percent of correctly answered comprehension questions regarding explicit and implicit information, although limitations in the critical analysis of content should certainly be noted. The process of reading and responding to NDRAs continues until the student is no longer successful at a given level of difficulty, which may vary from narratives to expositions. The level of difficulty and the genre of the most difficult text read with adequate comprehension (as the teacher establishes) designate the probable genre and level of material that the student will be able to read on his or her own and maintain similar levels of comprehension.

MEANING VOCABULARY. The first NDRA passage on which the student's comprehension is below standard is the first passage for examining word meanings. If the student is *not* able to define or use appropriately in oral language many of the important and



content-bearing words in this passage, the teacher should suspect meaning vocabulary as the cause of the student's comprehension difficulties. In this case, the teacher should teach the word meanings to the student, and then ask him or her to reread the passage (which is why there is a stop-decision spot on top of the "Word Meanings" box with a line back to "Nondirected Reading of Narratives and Expositions"). If comprehension is adequate, then one of the student's instructional needs is known. Next, the teacher should move directly to "Directed Reading of Narratives and Expositions" with higher level texts, understanding that part of the DRA will be meaning vocabulary instruction. The teacher should also assess the student's use of "Context Clues for Word Meanings," which are different context clues than those used for word recognition.

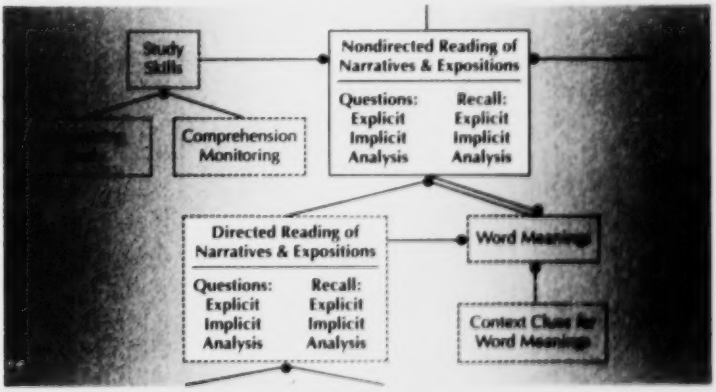
If the student who failed to comprehend this passage adequately *is* able to define nearly all the difficult words in this passage and the difficulty level of the text is *below* the student's expected level of reading ability, then it is known that meaning vocabulary was not likely the cause of the lack of comprehension. The teacher should now move to "Directed Reading of Narratives and Expositions."

If, however, the student *is* able to define all or nearly all of the more difficult words in this passage and the difficulty level of that passage is *at* or *above* the student's expected level, then it may be that this is the most difficult text the student is able to read. In these cases, the student's listening comprehension of that passage might provide further information, but listening comprehension is a nefarious trait and has such limited reliability in this circumstance that I would recommend a directed reading activity at this level of difficulty to ensure that this level is the maximum for this student.

DIRECTED READING. As indicated, the highest level of difficulty of material that a student is able to comprehend adequately when no instruction or assistance is provided is usually called a student's independent reading level (assessed via NDRAs). However, most students, especially students with reading difficulties, are able to read material that is more difficult or at a high-

er level than their independent level when instruction is provided to assist and guide them in that reading. The most difficult level of material that a student is able to comprehend at an acceptable level (as defined by the teacher's purposes and criteria) with instruction is called the student's instructional reading level. (Please note the definition used here. A few other reading researchers define instructional level in other terms; for example, see Bormuth, 1966, and Spache, 1981.) When a student's independent level is below his or her expected level of performance, it is necessary to determine that student's instructional level and, more important, the exact nature of that instruction. This is indicated by the "Directed Reading of Narratives and Expositions" box.

It is important that readers frequently read text that is at their instructional level: text that is a little too difficult to read independently but not too difficult to comprehend when appropriate instruction is provided. (It has long been thought that it is at least as important that the child also spends a greater amount of time reading easier or independent-level materials, but recent research by Carver and Leibert in 1995 found no benefit when students read easy texts.) Reading instructional-level material with



instruction provides the reader an opportunity to read more difficult material and to *extend* his or her reading strategies with the assistance (scaffolding) of a teacher or peers. Vygotsky (1978) defines the difference between what a child can do alone and what he or she can do only with assistance as the "zone of proximal development":

> It is the distance between the actual developmental level as determined by independent problem solving [in reading, nondirected reading] and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers [in reading, directed reading] (p. 86).

The predominant method of determining a student's instructional level for the last 50 years has been determining the passage difficulty (usually grade level) of the text on which (1) the number of oral reading errors the student makes exceeds some preestablished criterion and (2) the level of comprehension is not at an acceptable level. Not only is there a woeful lack of data to support the validity of counting errors in determining instructional level, but to do so leaves the implication that word recognition is the major—if not only—instruction the student needs in order to be able to read the text. Simply counting errors also fails to indicate the amount and form of instruction a student requires for successful reading of a difficult passage.

The position taken in this monograph is that the level (and genre) of text that a student is able to read with instruction can be determined validly only by selecting texts one (or more) level above the student's independent level (which, recall, is the most difficult text the student is able to comprehend without instruction or assistance), and then providing that student instruction before, during, and after reading. The most difficult level of text the student reads with such instruction is then the instructional level. In my experience with students who have reading difficulties but who are reading beyond the beginning second grade level, about two-thirds of them are able to read text one grade above their independent level when given instruction, and the other third are able to read texts two grade levels above their independent level with instruction.

Simply designating the level of material that a student can

read with instruction is not sufficient, however; the form of that instruction must also be ascertained. Such are the goals of the "Directed Reading of Narratives and Expositions" component. The diagnostic use of a directed reading activity allows a teacher to answer many questions about the exact nature of the instruction a student requires to comprehend material at this level of difficulty. When using a directed reading activity diagnostically, the teacher should pay careful attention to the student's instructional needs at four different times:

1. before reading the text (prereading);
2. as the student is reading (reading);
3. after the text has been read (postreading); and
4. while the student is rereading (rereading).

Table 1 displays important questions to guide the teacher's observations during each of these four stages of the directed reading activity. Two examples of the NDRA to DRA sequence are shown in Table 2.

LISTENING COMPREHENSION, PRIOR KNOWLEDGE, AND COMPREHENSION MONITORING. When a child's highest instructional level on a DRA is substantially below his or her expected level of proficiency (for example, a fifth grade student with average expectations who has a reading instructional level of grade two or three)—and that child does have major word recognition difficulties—then measures of listening comprehension may not be necessary, as the gulf between expected level and instructional level is explained by the severe word recognition problems. But when a child's instructional level in reading is well below his or her expected level—and word recognition and word meaning problems are not extensive—then a listening comprehension task may provide some useful information. If the child adequately comprehends material at his or her expected level, then listening comprehension and prior knowledge are satisfactory; yet further exploration of why the child did not comprehend the text in a DRA is necessary (such as purposes, motivation, or comprehension monitoring).

Table 1 Questions to Guide Planning and Diagnostic Observations During the Four Stages of a Directed Reading Activity

Prereading

- Must the student be taught to recognize words from the text (sight vocabulary)?
- Must harder words from the text be taught as meaning vocabulary?
- Is it necessary to review certain prior knowledge or teach specific knowledge or concepts for the student to comprehend the text?
- Is it necessary to break longer passages into smaller sections or chunks?
- Must purposes for reading be stated for the student, or is he or she able to do this?
- Does the student recognize the organizational aids in the material, or must those be demonstrated to him or her?

Reading

- Does the student seek assistance while reading?
- Is the student attentive during reading, or does attention wander such that he or she has to be reminded to attend?

Postreading

- Is the student able to retell and analyze the information in the text without much prompting or probing, or must specific questions be asked to extract the important information?
- If questions are needed, for what kind of information (explicit, implicit, or analysis) are they required?
- Does the student vary in comprehension of explicit and implicit information?
- Is the student able to apply logic, inference, and synthesis to the text?

Rereading

- When the student is unable to answer a question or report specific information, does he or she attempt to reread portions of the text?
- Does rereading the passages that convey that information result in the student being able to respond correctly?
- Does the student know what sections of the text to reread, or must he or she be directed to them?

Table 2 Two Examples of the Sequence of NDRAs and DRAs in the Diagnostic Process

(Note that these examples display only the level of material appropriate for NDRAs or DRAs but do not include the most important information—the instructional methods required.)

Example 1: John

Age: 9–10 **Grade:** 4 **Achievement Scores:** Voc 4.3 Comp 4.2
Grade level difficulty of last oral reading passage read successfully: 4th

Passage Number	Type of Passage (N = Narrative E = Exposition)	Grade Level of Passage	Comprehension
1	1st NDRA passage (E)	Grade 4	Successful
2 & 3	2nd NDRA passage (E & N)	Grade 5	Not successful on either
4 & 5	1st DRA passages (E & N)	Grade 5	Successful on both
6 & 7	2nd DRA passages (E & N)	Grade 6	Not successful

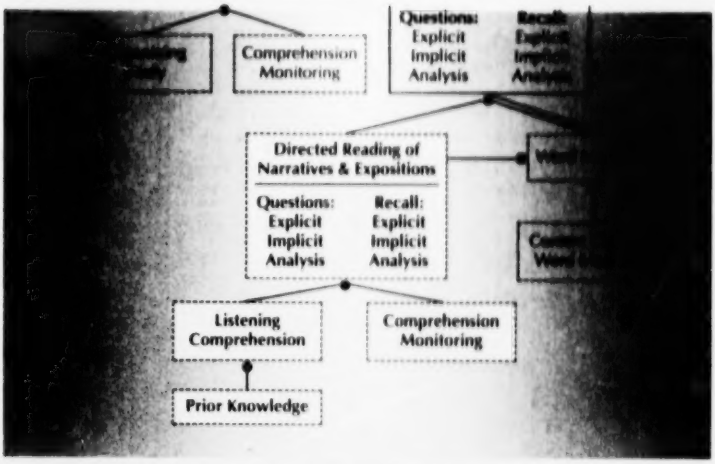
Interpretation: John is able to read 4th grade material independently and can read both expository and narrative 5th grade level material with instruction (note that the needed instruction is not indicated). He cannot read 6th grade level text even with instruction.

Example 2: Mary

Age: 10–0 **Grade:** 5 **Achievement Scores:** Voc 2.2 Comp 2.3
Grade level difficulty of last oral reading passage read successfully: 1.8

Passage Number	Type of Passage (N = Narrative E = Exposition)	Grade Level of Passage	Comprehension
1	1st NDRA passage (N)	Grade 1.5	Successful
2	2nd NDRA passage (N)	Grade 2.5	Successful
3	3rd NDRA passage (N)	Grade 3	Successful
4	4th NDRA passage (N)	Grade 4	Not successful
5 & 6	1st DRA passages (E & N)	Grade 4	Successful
7	2nd DRA passage (E)	Grade 5	Not successful

Interpretation: Mary is able to read 3rd grade material independently, and she can read 4th grade level expositions and narratives with instruction (note that the type of instruction needed is not indicated). She cannot read 5th grade level text even with instruction. Note that her oral reading performance vastly underestimated her independent level and misled the teacher to select NDRA passages that were far too easy.



If the child's instructional level and listening comprehension level are the same and below the expected level—and word recognition and word meanings are not major problems—then it is necessary to determine if the child has sufficient prior knowledge for this topic (the "Prior Knowledge" box). If he or she does, then major instructional effort must be given to developing the child's general language comprehension strategies.

Study Skills

When a student's performance in school is less than expected, it is not uncommon for teachers and parents to wonder if the student has a reading problem. Students certainly need to comprehend texts presented in a nondirected manner in order to study efficiently, but they also must possess abilities other than those of ordinary reading comprehension; thus the first step is to ascertain the student's ability to comprehend grade-level texts when presented in a nondirected manner (the "Nondirected Reading of Narratives and Expositions" box). If the evaluation is that the student has little difficulty comprehending such materi-

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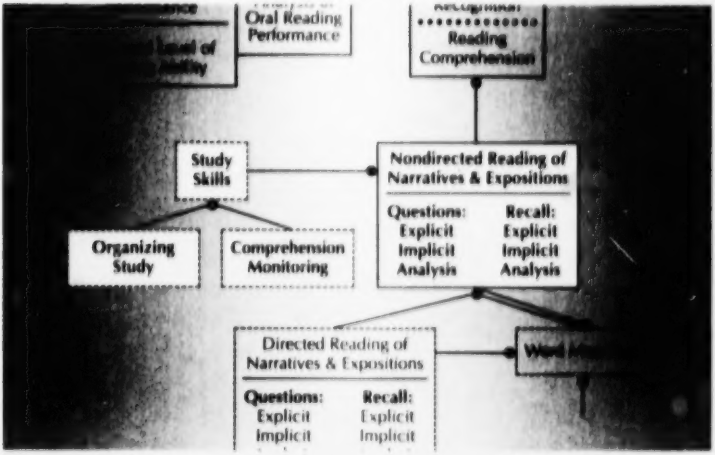
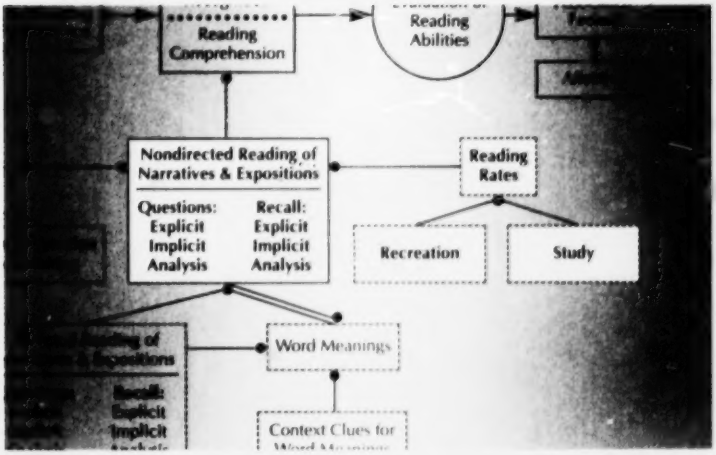


als, then it would be appropriate to consider that student's study skills—in other words, the teacher should consider "Study Skills" only after establishing the difficulty level of "Nondirected Reading of Narratives and Expositions."

Reading Rates

The "Reading Rates" box and its two components ("Recreation" and "Study") are considered only after ascertaining the reader's nondirected reading of narratives and expositions. Reading rate is not usually a cause of limited reading comprehension (see the next paragraph, however); thus, it is an issue only for texts that are at the student's independent or instructional level.

In addition to determining if a student's rate of reading text is sufficient, teachers should also be alert to a student's ability to adjust his or her rate of reading for varying needs or texts. Of course, students who are very slow readers will have little flexibility, but many students who have an adequate reading rate on difficult texts are not able to increase their rate on easier texts



or on materials that are less important. The reverse is a greater problem: students who comprehend fiction at a rapid rate and do not adjust their rate downward for studying context materials may encounter comprehension problems.

Summary of Reading Abilities

After determining the child's expected and actual reading level, analyzing the child's oral reading performance, and evaluating as comprehensively as necessary the child's performance in five categories of reading abilities, the teacher must compile this information into a clear conception of what the child knows about reading and can do and what the child does not know about reading and cannot do. This process is labeled "Summative Evaluation of Reading Abilities" in the first circle on the center strand of the model. With knowledge of the reading process and development of reading ability, this summation will be used to determine what the child needs to learn. This summation should actually be written, and teachers who maintain student portfolios should place these summaries in the child's portfolio. It is still

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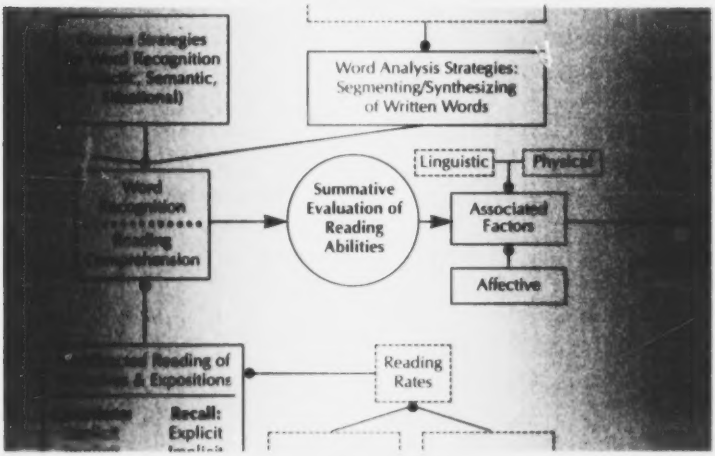


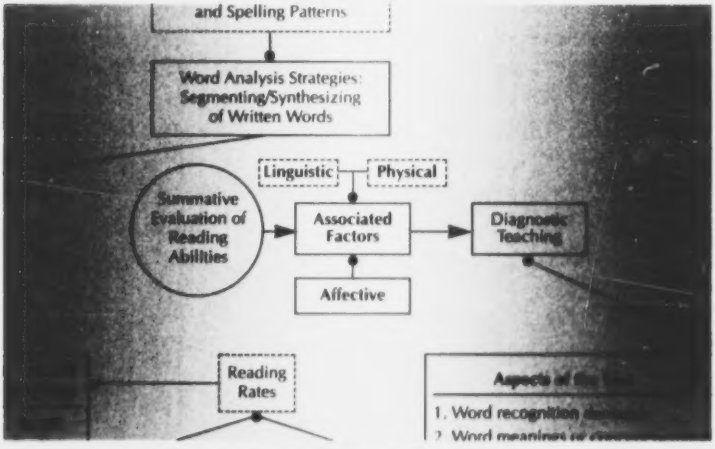
necessary to determine if other factors might be inhibiting the child's ability to learn to read ("Associated Factors"); and the most appropriate instructional materials and teaching procedures for this particular child have yet to be ascertained ("Aspects of the Text and Aspects of the Reader," "Diagnostic Teaching"). Thus it is too soon to formulate a potential instructional program.

It was noted earlier that this monograph is written from the point of view of diagnosing an individual child. But by now, it should be apparent that it is possible to diagnose an instructional group's abilities and instructional needs by using many of the components identified (such as DRA, NDRA, questions versus recall, and meaning vocabulary).

What Factors Might Be Associated with Reading Ability?

After summarizing a child's reading strengths and limitations, the next step is to determine if there are factors—linguistic, phys-

ical, and affective factors—possibly associated with or inhibiting the child's reading performance. "Affective Factors" must always be taken into account in a reading diagnosis. More than 75 years of researching factors correlated or thought associated with reading disability supports the conclusion that there is never any single cause of a reading difficulty (see, for example, Coles, 1987; Monroe, 1932; Robinson, 1946; Vellutino, 1979). In individual cases, however, certain factors (such as visual acuity or speech difficulties) have been found to affect the pace of learning, thus warranting correction of these factors by other professionals or modification of reading instruction to account for the limitations caused by these factors. In these cases, it is not the teacher's role to evaluate and correct such associated or inhibiting factors, although it is the teacher's role to be able to identify the signs of associated problems and to know when to refer a child to a trained specialist for further evaluation. And most important, although the limitations exhibited by a child in any of these associated areas may have to be taken into account when planning and implementing reading instruction, they



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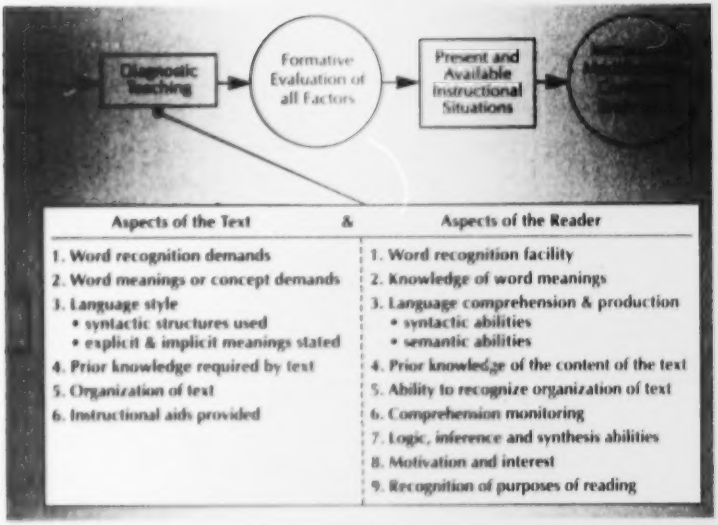
never become the goals of reading instruction. Perhaps the limitation should be corrected before instruction (as in the case of visual acuity difficulty) or perhaps the limitation must be taken into account when planning instruction (when a child exhibits a negative attitude or language difficulties, for instance), but the objectives of reading instruction are always reading and reading strategies—*not* correcting a child's limitations.

What are the Most Favorable Instructional Conditions for the Child?

Much of what is done during the initial stages of the diagnostic process is to find out what the student already knows, which enables the teacher to determine, with relative accuracy, what the student needs to learn. But assessing how a student learns best requires hands-on experimentation in regular, complete teaching situations with various approaches, levels, and materials. This means the teacher must select reading materials that take into account "Aspects of the Text and Aspects of the Reader," and "Diagnostic Teaching."

Matching Materials and Reader

Reading comprehension is a process by which the reader constructs or reconstructs the writer's written message. The degree to which that message is reconstructed or understood depends on the compatibility between the abilities, knowledge, and attitudes of the reader ("Aspects of the Reader") and the style, content, and structure of the writer's text ("Aspects of the Text")—within the "situational context" of the reading. It is assumed here that the situational context of the reading will be both directed and nondirected reading in a one-to-one or small group reading situation. Using this assumption for the situational context of reading, it is then important that the diagnostician carefully consider the match between "Aspects of the Reader" and "Aspects of the Text." There is no precisely stated algorithm for matching materials to a reader's needs, but the most important variables (or aspects) of text and reader that should be


Diagnostic Teaching
Formative Evaluation of all Factors
Present and Available Instructional Situations
Aspects of the Text
&
Aspects of the Reader
1. Word recognition demands
2. Word meanings or concept demands
3. Language style
• syntactic structures used
• explicit & implicit meanings stated
4. Prior knowledge required by text
5. Organization of text
6. Instructional aids provided
1. Word recognition facility
2. Knowledge of word meanings
3. Language comprehension & production
• syntactic abilities
• semantic abilities
4. Prior knowledge of the content of the text
5. Ability to recognize organization of text
6. Comprehension monitoring
7. Logic, inference and synthesis abilities
8. Motivation and interest
9. Recognition of purposes of reading

matched are shown in the "Aspects of the Text and Aspects of the Reader" box. Not the least important variable in this matching process is the student's interest in the material.

Diagnostic Teaching

As part of the diagnostic assessment of reading abilities, the teacher may have needed to give the student certain isolated mini-teaching activities (for instance, when considering the "Ability to Learn Sight Vocabulary," "Ability to Learn Word Analysis Skills," or "Directed Reading of Narratives and Expositions" components). These mini-lessons helped identify the strategies and skills the student needs to learn as well as productive methods of teaching these components. At this point on the model, this information and knowledge of the child's other reading limitations and strengths are to be used to formulate total reading lessons. The purpose of diagnostic teaching is not only to determine if those procedures used in mini-teaching situations are

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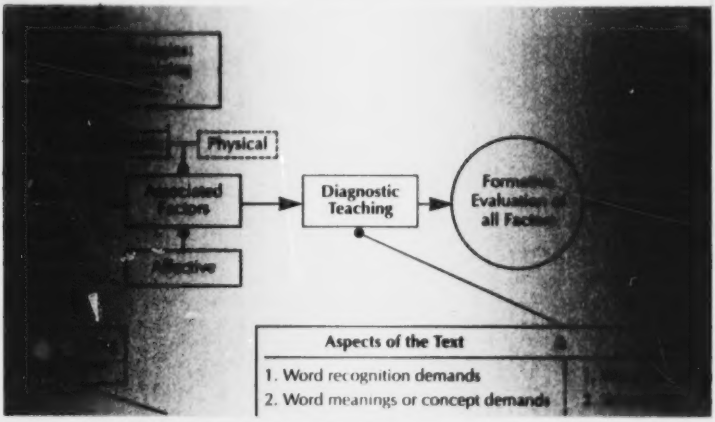
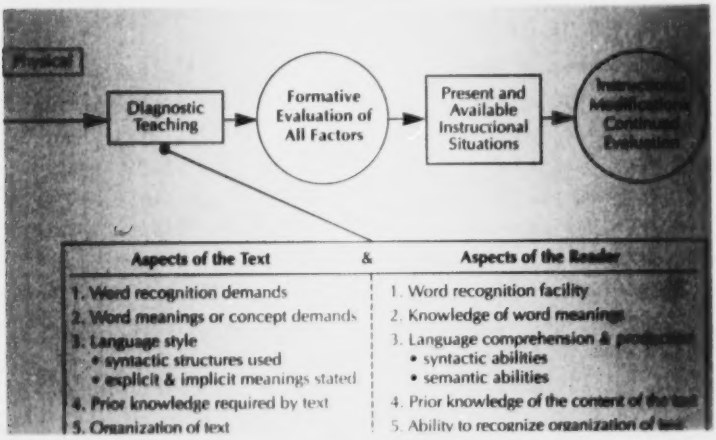


successful in a total lesson, but also to provide an opportunity to observe other factors important in planning successful reading instruction: for example, factors that affect the student's interests; the student's responses to failure; the student's responses to success; the student's attention span and variations in attention caused by changes in methods, materials, and content; the student's need for reinforcement and procedures that are reinforcing; factors that facilitate or inhibit the student's motivation; the pace of instruction or how much the student can learn and retain at one time; the amount of help the student needs in inducing and applying general principles; and the amount of review a student needs to reach mastery. Note that the most important variables of instruction are those that define teacher or student behaviors—not those that identify skills or materials.

FORMATIVE EVALUATION OF ALL FACTORS. After diagnostic teaching, it is possible to integrate and interpret all the information (including associated factors) and formulate recommendations for the child. This circle is labeled "Formative Evaluation of All Factors" on the model. After formulating what seems to be the best instructional program and milieu, it is usually nec-


Diagnostic Teaching
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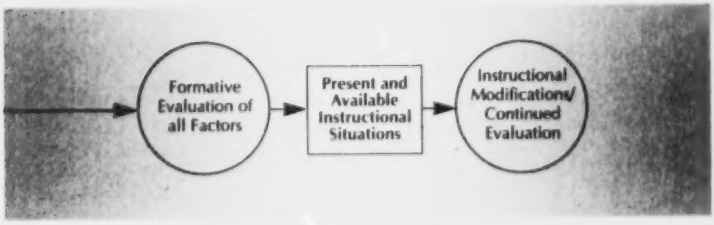
Formative Evaluation of all Factors
Present and Available Instructional Situations
Instructional Modifications/ Continued Evaluation

essary to consider those recommendations in light of the instructional resources available, as indicated by the "Present and Available Instructional Situations" component. This means it is necessary to assess the suitability of available resources and provide recommendations compatible to the operating procedures of that resource.

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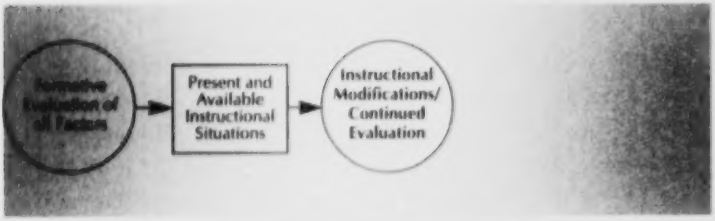
What Are the Recommendations for Reading Instruction?

From every diagnosis, certain recommendations must result. Recommendations describe a child by summarizing (1) *what* the child knows and needs yet to learn, (2) the specific *instructional situation* or environment needed for instruction (such as one-to-one, small group, or peer tutoring), and (3) *how* the child learns and attends. Most of this information is obtained from the observations and evaluations of the student's learning during the instructional components of individual strands (DRAs and learning word analysis skills) and diagnostic teaching. The recommendations for instruction must turn this information into concrete suggestions to be used to guide the planning of individual lessons.

One major component of instructional recommendations reports *what* the child needs to learn. This information is gained in large part from the child's case history and from the formal and informal assessment and measurement procedures used. The recommendations should specify the content the student needs to learn and possible teaching methods and materials. As a minimum, content recommendations should elaborate in detail on the following:

- the content (strategies, skills, and applications) the student needs to learn;
- the content the student might need to review briefly;



- the content the student has already learned;
- the types and levels of material (including some specific titles) that are appropriate—and inappropriate—when used to practice and reinforce specific content;
- a suggested sequence of the content to be taught;
- how the parents should be involved in the child's reading programs;
- topics that interest the student;
- how to facilitate the child's recreational reading; and
- how to assess changes continually and adapt to them.

A second consideration about recommendations is that the most appropriate or ideal recommendations for the instructional situation must be stated, even if there is only a remote likelihood that such an environment can be obtained. For example, if individual remedial reading instruction appears to be the most appropriate recommendation, then this recommendation must be made, even if there are no individual instructional facilities available or funds for such facilities. There are three reasons for clearly stating to the child's home and school, and perhaps the child, the ideal recommendations. The first is purely an obligatory one: as professionals, classroom and reading teachers must be tactfully honest and direct with their clientele. It is the professional's responsibility not only to inform parents but also to make sure parents understand. A second reason for stating ideal or best possible recommendations is that if not told, parents may not seek alternative routes to achieve the recommendations or may not avail themselves of the ideal circumstances if they should unexpectedly arise. The third reason is that statements of the best possible program or milieu for one student may lead to changes and growth in the facilities, programs, and personnel of schools and other professional agencies.

Most important, recommendations must state explicitly the specific instructional methods and techniques that seem mandatory for the child to become a better reader. Such information is learned during the diagnostic teaching sessions. These recommendations should be stated concretely with examples.

CHAPTER 4

A Complete Example: Sandra

The previous examples in Chapter 2, using students Roland and Tracy, demonstrated the upward progression of the diagnostic decision-making model through the word recognition component and strands. This example, Sandra, will show downward movement on the model, through the reading comprehension component and strands. A beginning fifth grade girl, Sandra, scored at the high fourth grade level on standardized reading achievement tests administered in May of her fourth grade. Sandra also scored in the high-average range on a group intelligence test administered when she was in second grade. However, her fifth grade teacher has observed in the first several weeks of instruction that Sandra has considerable difficulty in comprehending the reading materials used in class and that when she is called on to read orally from these materials, she makes several errors or miscues, even when the material is being read for the second or third time. The teacher is concerned that the reading materials and reading instruction he has been giving to Sandra are too difficult for her. The teacher administers a listening vocabulary test to obtain a more recent assessment of Sandra's expectancy, and like the second grade IQ test, Sandra's score is in the high-average range for her age and grade.

On measures of oral reading, the teacher notes that Sandra can read third grade material with excellent fluency and no significant miscues. On fourth grade material, Sandra reads with moderate fluency, her occasional miscues are syntactically and

semantically acceptable, and she has adequate comprehension. On fifth grade material, Sandra makes numerous substitutions: on less important, function words, most of her substitutions are syntactically and semantically acceptable; but on more important content words (nouns and verbs), her errors or miscues are substitutions of whole words that are not semantically or syntactically acceptable in the context and that are grapho-phonically similar to the word in the text (for example, "the bugs ate the planet" for "the bugs ate the plant"). Despite these substitutions, Sandra's comprehension is still barely adequate. On sixth grade text, Sandra's oral reading is very labored. She reads in a word-by-word manner, making numerous substitutions. She appears to lose all sense of the text as only two of her substitutions are grammatically acceptable, with the remainder being nonwords resulting from incorrect attempts to identify the word with graphophonic strategies. Comprehension is not at an acceptable level.

The teacher's evaluation of Sandra's oral reading is that Sandra uses context skills effectively on easy (third grade) and moderately difficult (fourth grade) material. But on more difficult material (fifth and sixth grade), in which she encounters many hard words, she not only is unable to use the context for word recognition (which might be expected because of the proportion of difficult words), but she also is unable to apply graphophonic strategies. Thus, both sight vocabulary and word analysis (of the "Word Recognition" component) need to be assessed. Further, because the teacher needs to know what level of material Sandra can read independently and with instruction and what instruction is needed, he will administer both nondirected and directed reading activities (the "Reading Comprehension" component).

The teacher assesses Sandra's sight vocabulary (the "Sight Vocabulary" box) by asking her to identify in isolation several of the words she missed on the oral reading passages and several words selected from the reading materials used in class. In isolation, Sandra is not able to identify in a fluent or rapid manner any of those words she failed to read in context, but she does identify many of the words when given time to apply word analysis skills. From oral reading data and these words-in-isola-

tion tests, the teacher's evaluation is that Sandra has an extensive—but not sufficient—sight vocabulary. Using a phonics inventory prepared by the school district (the "Word Analysis Strategies" box), the teacher finds that Sandra actually has mastered—when words and nonsense words are presented in isolation—a significant number of moderately difficult and difficult word analysis skills. Although her performance in isolation indicates adequate to excellent word analysis skills, her oral reading performance on the fifth and sixth grade passages indicates that Sandra does not apply these skills in oral reading.

Next, Sandra's teacher prepares a fifth grade nondirected reading activity of an exposition (the "Nondirected Readir•g of Narratives and Expositions" box). Sandra reads the text—silently—in a reasonable amount of time, but when asked to retell it, she experiences extreme difficulty. The teacher then asks a series of questions. Sandra's comprehension of explicitly stated material is barely adequate, and she appears to be totally unaware of implied content. She is able to make logical predictions based on the content she did comprehend, and she is able to find the humor in the author's juxtaposition of two conflicting ideas. The teacher asks Sandra to read 10 or 12 of the harder words in the text, and she is unable to identify any of them quickly. When the teacher tells Sandra the words, Sandra is able to define or use each of them acceptably (the "Word Meanings" box). Although Sandra does know the meanings of these harder words, the teacher observes that Sandra's responses to questions betray a lack of background or prior knowledge of the topic of the text.

Using what was learned from this NDRA, the teacher develops a DRA for another fifth grade exposition text of about 1300 words (the "Directed Reading of Narratives and Expositions" box). The teacher prepares this DRA by planning six components: (1) teaching Sandra seven to nine of the harder words in the text; (2) having Sandra tell what she knows about four specific concepts that are important for understanding the content of the text (and if her prior knowledge is limited, planning to tell or teach her this content before the text is read); (3) breaking the text into three sections (chunks), each followed by questions,

discussion, and preparation for the next section; (4) asking Sandra to skim each section and establish purposes for reading the section (and if she cannot do this, planning to provide her the purposes for reading the section); (5) assuming that Sandra cannot respond adequately to a retelling task, thus moving directly to asking questions; and (6) preparing questions for specific content that is implied in the text and being prepared to have Sandra reread those sections if she cannot provide the information after the first reading.

Sandra learns the words taught with minimum instruction, and she is able to define or use each before this instruction. Before reading, Sandra has little difficulty in discussing two of the four concepts that are important, but the teacher must provide substantial information about the other two. Sandra is not able to skim the text at all and is therefore unable to establish specific purposes for the reading, thus the teacher establishes them. When proceeding section by section, Sandra answers nearly all the teacher's questions about explicit content, but is not able to answer questions about implied content. When directed to reread the text, she still does not answer the questions adequately, although she does better than after the first reading. Although she has difficulty comprehending implied content and meanings, she has little or no difficulty with the critical reading skills of analysis and evaluation. Not only does she point out certain discrepancies in the text, but she also states (without being asked) three questions that required synthesis of two or more points in the text. All in all, the teacher's evaluation is that Sandra demonstrates excellent comprehension of explicit information when given the directions and instruction that were provided and that she is able to apply logical and critical analysis skills to this information.

The teacher tries a similar DRA with sixth grade material, but Sandra's comprehension is less than adequate. The teacher then reads the text to Sandra (the "Listening Comprehension" box), and her comprehension does not improve.

If Sandra is typical of her instructional group or situation, then it would be reasonable to presume that the findings regarding her need for prior knowledge instruction, meaning vo-

cabulary instruction, purpose setting, and the need to focus her attention on implicit information would also be suitable for that group or situation—at least until other students in that group are diagnosed.

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October 1995

ISBN 0-87207-133-2
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9 780872 071339

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